EFJohnson®

53SL^{Series} Mobile Radio

700/800   VHF   UHF

The 53SL Series mobile radio is a very capable and flexible tool designed for demanding public safety communications applications. The ability to seamlessly interoperate with analog and digital, wideband and narrowband, and a wide variety of trunking protocols – all installed simultaneously in the same radio – makes this mobile ideal for migrating critical systems to the latest open standards. This flexibility helps protect your investment in the future as well as maximizing interoperability among most installed systems.

Project 25 Compliance
Supports Project 25 CAI (Common Air Interface), P25 Trunked and Conventional system protocols, and P25 Over-The-Air Rekeying (OTAR).

Industry's Only SMARTNET® II / SmartZone® Licensee
Industry's only supplier licensed to support both analog and digital SMARTNET II and SmartZone trunking protocols.

Encryption
Supports DES and industry standard P25 digital DES-OFB.

EFJohnson is a leading provider of Project 25 compliant two-way radios and communication systems for law enforcement, fire fighters, EMS, and military.

More Key Features and Benefits

Robust and Flexible
- 512 Channels / Talkgroups
- P25 Digital and Analog
- Supported Protocols Installed Simultaneously
- DES & DES-OFB Encryption
- P25 Conventional & Trunked OTAR
- Supports Key Elements of MDC1200
- Compatible with Motorola Astro®
- Supports Motorola System v6.5

Trunking
- SMARTNET II / SmartZone
- P25

Data and Control Interfaces
- Supports P25 Conventional IP Packet Data
- Supports GPS AVL Data
- Radio Control Available to 3rd Party Developers

Simplified Feature Updates and Option Selection
- Flexible Programming
- PC Configure™ Software Tool

Multiple Configuration Options
- Dash-Mount
- Trunk-Mount
- 2 Control Heads
- Hand-Held Controller
- Internal or External Speaker
- Fixed Control Stations
- Siren Option

53SL^Series Mobile Radio

Typical Performance Specifications Subject to Change

GENERAL	700/800 MHz 30/35 W	VHF 50W	VHF 100W	UHF R1 40 W	UHF R2 40 W
Frequency Range (band splits)	762–870 MHz	136–174 MHz	146-174 MHz	380-470 MHz	450-512 MHz
Channel Spacing					
Analog			25,12.5 kHz		
P25 Digital			12.5 kHz		
Maximum Frequency Separation			Full Band Split		
Display		Backlit LCD. 10 alpha-numeric characters plus Zone, Ch, & Status. Electronically adjustable viewing angle			
Power Supply					
Nominal Voltage (negative ground)			13.6 VDC		
Operating Supply Voltage Range			10.9 ~ 16.3 VDC		
Standby Current (back-light off)			700 mA		
Receive Current at Rated Audio Power			2.7 A		
Current at Max Rated Transmit Power	15 A	14.5 A	30 A	12 A	12 A
Temperature Range					
Operating			-30°C to +60°C		
Storage			-40°C to +85°C		
Nominal Dimensions (W x H x D)	5.3 x 18.2 x 21.1 cm	5.3 x 18.2 x 21.1 cm	5.3 x 18.2 x 35.5 cm	5.3 x 18.2 x 21.1 cm	5.3 x 18.2 x 21.1 cm
exclusive of mounting, cables, knobs	(2.1 x 7.2 x 8.3 in)	(2.1 x 7.2 x 8.3 in)	(2.1 x 7.2 x 14 in)	(2.1 x 7.2 x 8.3 in)	(2.1 x 7.2 x 8.3 in)
Nominal Weight	2.3 kg (5.5 lb)	2.3 kg (5.5 lb)	3.9 kg (8.5 lb)	2.3 kg (5.5 lb)	2.3 kg (5.5 lb)
FCC ID	ATH2425371	ATH2425311	ATH2425312	ATH2425331	ATH2425341
Industry Canada	IC: 933B-2425371	IC: 933B-2425311	IC: 933B-2425312	IC: 933B-2425331	IC: 933B-2425341

TRANSMITTER					
RF Output Power (variable)	10~30 W (762~806 MHz) 10~35 W (806~870 MHz)	10 W ~ 50 W	50 W ~ 100 W	10 W ~ 40 W	10 W ~ 40 W
Transmitter Frequency Range(s)	762~776, 792~806, 806~825, 851~870 MHz	136 ~ 174 MHz	146 ~174 MHz	380 ~ 470 MHz	450 ~ 512 MHz
Maximum Frequency Seperation			Full Band Split		
Frequency Accuracy* (-30°C ~ +60°C, +25°C ref.)			±1.5 ppm		
Modulation Limiting					
25 kHz channels			±5 kHz		
12.5 kHz channels			±2.5 kHz		
Modulation Fidelity (C4FM, 12.5 KHz Digital)			<5%		
Spurious Emissions			-75 dBc		
Audio					
Analog Freq. Resp. (TIA 6dB/octave pre-emphasis)			+1, -3 dB		
FM Hum and Noise Ratio (25 kHz Analog)	40 dB	45 dB	45 dB	45 dB	45 dB
FM Hum and Noise Ratio (12.5 kHz Analog)	34 dB	39 dB	39 dB	39 dB	39 dB
Distortion		2%			
FCC Emission Designators	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E			

RECEIVER					
Receiver Frequency Ranges	762~776, 851~870 MHz	136~174 MHz	146~174 MHz	380~470 MHz	450-512 MHz
Maximum Frequency Seperation			Full Band Split		
Sensitivity					
Analog Mode: 12 dB SINAD (25 & 12.5 kHz)	0.25 uV (-119 dBm)	0.35 uV (-116 dBm)	0.35 uV (-116 dBm)	0.35 uV (-116 dBm)	0.35 uV (-116 dBm)
Digital Mode: (5% BER)**	0.25 uV (-119 dBm)	0.35 uV (-116 dBm)	0.35 uV (-116 dBm)	0.35 uV (-116 dBm)	0.35 uV (-116 dBm)
Adjacent Channel Rejection					
(analog 25 kHz)			75 dB		
Intermodulation	73 dB	75 dB	75 dB	75 dB	75 dB
Spurious Response Rejection	75 dB	75 dB	75 dB	75 dB	75 dB
Audio					
Analog Freq. Resp. (TIA 6dB/octave pre-emphasis)			+1, -3 dB		
Output Power (3 Ω load)			12 W rms		
Distortion (1 kHz, 60% Deviation)			<3%		

*FCC Part 90.213

**Measured in digital mode per TIA/EIA 102. CAAA and TIA 102.CAAB Standards.

ENVIRONMENTAL SPECIFICATIONS

Environment	Mil Spec 810C		Mil Spec 810D		Mil Spec 810E		Mil Spec 810F	
	M	P	M	P	M	P	M	P
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II
High Temp.	501.1	I	501.2	I, II	501.3	I, II	501.4	I, II
Low Temp.	502.1	I	502.2	I, II	502.3	I, II	502.4	I, II
Temp. Shock	503.1	I	503.2	I	503.3	I	503.4	I
Solar Radiation	505.1	I	505.2	I	505.3	I	505.4	I
Rain/Blown Rain	506.1	I, II	506.2	II	506.3	I, II	506.4	I, II
Humidity	507.1	II	507.2	II, III	507.3	II, III		
Salt Fog	509.1	I	509.2	I	509.3	I		
Dust and Sand	510.1	I	510.2	I	510.3	I	510.4	I
Vibration	514.2	VII, VIII	514.3	I(8)	514.4	I(8)	514.5	I(24)
Shock	516.2	I, II, V	516.3	I, IV, VI	516.4	I, IV, VI	516.5	I, IV, VI

M=Method P=Procedure

ENCRYPTION OPTIONS

Supported Encryption Algorithms	DES, DES-OFB
Encryption Algorithm Capacity	4 Maximum
Encryption Keys/Radio	16 Common Key Reference (CKR) 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 360 msec
Encryption Keying	External Key Loader, OTAR
Synchronization	CFB – Cipher Feedback OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Erasure	Keyboard Command
Code Key Initialization	Internal pseudorandom generator

ACCESSORIES

- Antennas
- Keypad Microphones
- Desk Microphones
- Hand-Held Controller
- Remote Control Heads
- External Speakers
- Power Supplies
- Control Station Components
- Tone Remotes
- Encryption Key Management Tools
- Radio Programming Tools
- Mounting Hardware
- Siren
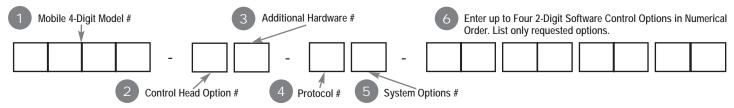
EFJohnson®

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Price List

APCO Project 25/SMARTNET®/SmartZone®

How to Make a Model String - Select Mobile and Options, Enter Numbers in these Boxes.

1 Mobile 4-Digit Model #   **3** Additional Hardware #   **6** Enter up to Four 2-Digit Software Control Options in Numerical Order. List only requested options.

2 Control Head Option #   **4** Protocol #   **5** System Options #

Step 1 Select a Mobile Base Model, Either Dash or Remote-Mount Option

Dash-Mount Base Model, Includes Microphone and Cables		List Price
5417	VHF 50W, 136-174 MHz	$ 1,700
5425	VHF, 100W, 146-174 MHz	2,060
5463	UHF R1, 40W, 380-470 MHz	1,840
5443	UHF R2, 40W, 450-512 MHz (Availability to be announced. Confirm delivery with factory prior to placing order.)	1,840
5477	700/800 MHz, 30W/35W, 762-870 MHz	1,700

Remote-Mount Base Model, Includes Microphone and Cables		
5418	VHF, 50 W, 136-174 MHz	$ 1,700
5426	VHF, 100 W, 146-174 MHz	2,060
5464	UHF R1,40W, 380-470 MHz	1,840
5444	UHF R2, 40W, 450-512 MHz (Availability to be announced. Confirm delivery with factory prior to placing order.)	1,840
5478	700/800 MHz 30W/35W, 762-870 MHz	1,700

Step 2 Select Control Head Option

Dash-Mount Options		
1	Dash-Mount Control Head	$ 80
4	Dash-Mount Control with Remote Control Head, factory installed, includes one remote control head, microphone, and normal bracket.	650

Remote-Mount Options		
0	Remote Control Head, includes microphone	$ 550
5	Handheld Controller, includes junction box and cabling. Requires remote speaker 250-0151-005, ordered separately.	750
6	Double Control Head, includes two remote control heads attached to the remote mount radio, two microphones, and two mounting brackets.	1,200

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Effective June 6, 2005.
Prices subject to change without notice.

Base Mobile Radio #   Control Head Option #

Enter Mobile Base Radio Price in **Box A** → $

Enter Control Head Price in **Box B** → $

Step 3 Select Additional Hardware Options

Dash/Remote Mount Options (Select one) · **List Price**

1	No Additional Hardware	N/C
2	Siren Control Cable (597-2002-231) Connects to siren kit 250-5300-100 and other siren accessories.	$ 70
3	Control Head Cable option for future remote control head or fixed control station applications	200
4	Special/custom application cable option (597-2002-245 with female DB-25 connector)	190
5	Data Interface Cable (597-2002-282 with female DB-25 connector)	80

Step 4 Select a Protocol

1	Analog FM	$ N/C
2	Project 25 Digital CAI (Common Air Interface) Includes Analog FM	350

Step 5 Select a System Option

0	Conventional System	$ 550
1	SMARTNET® II Trunking (Includes System Option 0)	600
2	SmartZone® Trunking (Includes System Option 0 and 1)	750
3	SmartZone Trunking and Project 25 Trunking (Includes System Option 0, 1 and 2)	975
5	Project 25 Only Trunking (Includes System Option 0)	775

Step 6 Select Software Control Options, May Select Up to Four Options

05	DES/DES-OFB Encryption (Does not support DES-XL)	$ 550
11	Project 25 OTAR Conventional and Trunking	750
13	Project 25 Data Conventional (Requires Data Interface Cable 597-2002-282)	140
50	Zone Fail-Site Lock (Requires system option 2 SmartZone Trunking or higher)	150
60	MDC1200 Support	50

Step 7 Enter Prices, Then Total

Mobile Radio Base Price from **Box A**	$ _____
Control Head Price from **Box B**	$ _____
Additional Hardware Price	$ _____
Protocol Price	$ _____
System Options Price	$ _____
Total Price of all Software Control Options (Add Up to 4)	$ _____
TOTAL PRICE	$ _____

Effective June 6, 2005.
Prices subject to change without notice.

Additional Hardware #   Protocol #   System Option #   Software Control Option 2-digit #s

■■■■■ - ■ □ - □□ - □□ □□ □□ □□

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Quantity:	
Discount %:	20.0%
List Price each:	
Discount Price each:	
Total Discount Price:	

Model String

MODEL *(Includes 3 Year Warranty and Programming)*

☐ Dash-Mount (includes microphone and cables)

☐ Remote-Mount (includes microphone and cables)

$1,804	☐ VHF, 50W, 136-174 MHz
$2,164	☐ VHF, 100W, 146-174 MHz
$1,944	☐ UHF R1, 40W, 380-470 MHz
$1,944	☐ UHF R2, 40W, 450-512 MHz
$1,804	☐ 700/800 MHz, 30/35 W, 762-870 MHz

CONTROL HEAD

Dash-Mount Options

$80	☐ Control Head
$650	☐ Remote Control Head (includes microphone and bracket)

Remote-Mount Options

$550	☐ Control Head (includes microphone)
$750	☐ Handheld Controller (includes junction box and cabling)
$1,200	☐ Double Control Head (includes dual microphones and brackets)

ADDITIONAL HARDWARE OPTIONS

$0	☐ No Additional Hardware
$70	☐ Siren Control Cable (connects to other siren accessories)
$200	☐ Control Head Cable (for future remote applications)
$190	☐ Custom Applications Cable (with female DB-25 connector)
$80	☐ Data Interface Cable (with female DB-25 connector)

PROTOCOL

$0	☐ Analog FM
$350	☐ Project 25 Digital CAI (Common Air Interface, includes Analog FM Protocol)

SYSTEM

$550	☐ Conventional System
$600	☐ SMARTNET II Trunking (includes Conventional System)
$750	☐ SmartZone Trunking (includes Conventional and SMARTNET II Trunking)
$975	☐ SmartZone and P25 Trunking (includes Conventional, SMARTNET II, and SmartZone
$775	☐ Project 25 Only Trunking (includes Conventional)

SOFTWARE CONTROL   (may select up to 4 options)

$550	☐ DES/DES-OFB Encryption
$750	☐ Project 25 OTAR Conventional and Trunking
$140	☐ Project 25 Data Conventional (Requires Data interface
$165	☐ Zone Fail-Site Lock (requires a SmartZone System
$50	☐ MDC1200 Compatibility